Management of involuntary childlessness

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SUMMARY

Any definition of involuntary childlessness has to consider the difference between sterility and subfertility. As the latter affects about 20–30% of all couples at least once in their lives, general practitioners (GPs) may be the first to be confronted with this problem. This review presents the most relevant diagnostic and therapeutic options in cases of female or male infertility, and discusses the new assisted reproductive technologies (such as insemination, in vitro fertilization, gamete transfer and intracytoplasmatic sperm injection) so that GPs may adequately inform their patients about these procedures and their risks and outcomes. Although controversial, involuntary childlessness and its clinical treatment seem to have a strong psychological impact on a couple's social, emotional and sexual life. Being available for discussion with childless couples and offering ongoing support may be the most important role for the GP in this context.

Keywords: Infertility; diagnosis; therapy; psychology; family practice; review.

Introduction

REPRODUCTIVE medicine is one of the most rapidly growing disciplines in biotechnology. Sensational reports about women giving birth to babies at the age of 60[1] create the impression of an unlimited spectrum of technical options. If the treatment of infertility is regarded as an issue for specialists,[2] it may seem that the general practitioner's (GP's) role is merely to refer childless couples to fertility clinics as soon as possible. However, this perception is fallacious: bio-medicine is not able to treat all infertile couples successfully,[3] nor is involuntary childlessness an obvious condition to be recognized, referred and treated. Indeed, it presents a challenge for GPs.

Methods

The purpose of this review is to provide information about the prevalence of involuntary childlessness, about diagnostic and therapeutic options and their risks and benefits in male and female infertility, and about the psychosomatic aspects of the condition. The literature search was performed up to and including July 1996 using the MEDLINE database, the official annual reports of all German units of Assisted Reproduction Techniques (ART) in the journal Fertilitaet, and the exhaustive handbook edited by Keye and colleagues.[4] Criteria for the inclusion of articles were those laid down by Oxman.[5] Where appropriate, methodological flaws in the studies cited are mentioned. Since much of the research in this highly specialized area takes place in selected populations, one important criterion for the inclusion of papers was their relevance for general practice. For this reason, it was fitting that the authors constituted an interdisciplinary team.

Definition

Infertility is usually defined as the failure to conceive after unprotected intercourse for (more than) one year[6] or two years.[7] The failure to conceive a second or subsequent pregnancy is defined as secondary infertility.[8] 'Infertility' refers to any problems in conception, whereas sterility suggests a definite, biological cause of a couple's childlessness. Some authors prefer the terms 'subfecundity' or 'subfertility'[9-11] to emphasize that a woman can sometimes give birth to a child after several years of infertility without undergoing any medical interventions. The expression 'involuntary childlessness' is less somatizing, but it may not always be easy for doctors to determine whether or not a couple is childless by choice. The GP will often be confronted with different stages of childlessness and will have to decide whether the patient's condition meets the criteria for infertility or involuntariness.

Prevalence of involuntary childlessness

The rate of infertility strongly depends on the definition used, i.e. on the time span involved in the failure to conceive. Between three and seven per cent of all couples or women have an unresolved problem of infertility.[12-14] Many more couples, however, experience involuntary childlessness for at least one year: estimates range from 12% to 28%.[6,9,12,14,15] These figures indicate that GPs will meet a considerable number of infertile patients in their practices, and that some of these patients will (directly or indirectly) be seeking or expecting professional advice.[16]

Some authors assume that an increase in infertility rates, or a decline in sperm count, in the past decades is due to environmental factors, but this is highly controversial.[17-20] There is no doubt that behavioural factors (e.g. a tendency to delay childbearing) are responsible for increased infertility rates.[8] Moreover, the availability and use of advanced medical services may suggest an increase in the prevalence of infertility.[14,21,22]

Psychosomatic aspects of infertility

> My infertility is a blow to my self-esteem, a violation of my privacy, an assault on my sexuality, a final exam on my ability to cope, an affront to my sense of justice, a painful reminder that nothing can be taken for granted. My infertility is a break in the continuity of life. It is above all, a wound — to my body, to my psyche, to my soul.
> (Jorgenson)

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Psychogenic infertility

The psychodynamic approach[23-30] is based on the assumption of sterility as an individual or interpersonal defence mechanism against fears (for example against dangers associated with the reproductive function[31]) or as an inability to accept an ambivalent wish for a child.[32] This may be true for some of the patients with idiopathic (unexplained) infertility, who normally make up about 10–18% of all causes of infertility.[33,34] Psychological mechanisms may also influence the physiological and neuroendocrinological functioning.[35,36]

Some but not all studies about women with psychogenic or unexplained infertility have described them as being more emotionally unstable, neurotic and anxious, and as having more psychodynamic conflicts and fears associated with their partnership, femininity and reproduction compared with 'organically' infertile couples or with fertile people.[25-27,37] Even if a GP were to detect such characteristics in a patient, it would be difficult to assess whether they were due to infertility and medical treatment, or were a cause of it.

Psychological responses to infertility

Confronted with an infertility crisis, couples are seen to pass through quite similar stages of reactions and feelings. After the initial shock and surprise[38,39] many couples try to protect themselves against the overwhelming impact of infertility by denying its existence.[38,40] However, when used as a permanent coping mechanism, denial hinders the couple from working through the infertility crisis. Anger is a later response to the helplessness and loss of control often experienced during the investigation and treatment of infertility.[38,41-43] Even today, social pressures to become parents[35,44-47] still result in childless people being confronted with unsolicited advice, misunderstanding and cold comfort.

Feelings of failure, embarrassment, shame, and stigmatization[38,46,48] may lead to social isolation, i.e. a withdrawal from potential sources of social support, and often to a breakdown in communication between the couple.[38,42,49] Guilty thoughts about infertility often relate to feelings of being punished by higher powers.[42] Grief is seen to be the most compelling feeling experienced, especially in cases of permanent infertility. It involves the loss of a life goal, of a potential child, and 'the loss of genetic continuity;... the loss of the pregnancy experience itself'.[38] The impact of infertility can be understood as a mourning process.[38,40,42,50-53] Infertile people have to adapt to an intangible and indefinite loss (a child that never was) for which mourning rituals and social support systems are usually not available. Reviewing descriptive studies on infertility, Strauss[54] concluded that about 10–50% of all infertile patients report psychological distress, manifested mainly in functional somatic symptoms, depressive reactions, emotional instability, diminished self-confidence, sexual problems and conflicts arising from their desire for a child.[55-59]

Systematic studies contrasting infertile patients with control groups (mainly fertile people) have failed to achieve consistent results. In some studies, only minimal differences (if any) have been found between these groups.[60-66] Other authors, however, have reported significant psychological characteristics of involuntarily childless patients compared with fertile people: neurotic symptoms,[67] somatic symptoms,[29,30] emotional lability and anxiety,[67-70] depressive reactions,[29,30,71] sexual problems,[30,71-74] diminished self-confidence,[71,73] symbiotic relationships,[75] and traditional role concepts.[76,77] Although there is little doubt that infertility does have psychological consequences for some couples, there is a lack of any clear theoretical rationale for the variables and the measures employed as well as a paucity of carefully designed longitudinal studies.[34]

Male infertility: aetiology, diagnostic and therapeutic options

Recent data have determined that approximately 20% of all cases of infertility are due entirely to a male factor and an additional 30% involve both male and female factors.[78] Physicians, however, frequently overlook the man as a potential contributor.[79] In general, the male factor is easier to diagnose and less invasive; GPs should therefore start with the investigation of the male partner when this seems appropriate to the infertile couple.[80,81]

Aetiologic categories of male infertility

Cryptorchism and aplasia of the epididymis, the vas deferens or the seminal vesicle, and varicoceles (15–30% of all infertile males) are all causes of male infertility.[82,83] Infertility may also be due to endocrinological abnormalities (e.g. pituitary disease or Kallmann's syndrome). Approximately 6% of all infertile men are found to have chromosomal abnormalities, above all Klinefelter's or XXY syndrome. Azoospermia is often due to seminiferous tubular sclerosis. Inflammations, such as orchitis due to mumps, can result in atrophy of the seminiferous tubules. Epididymitis and prostatovesiculitis may also lead to infertility. Other reasons for the development of infertility are antibodies against spermatozoa (e.g. after vasectomy), cytostatic therapy, radiation, systemic illness, drugs such as alcohol, cigarettes and caffeine, and environmental factors. According to Carlsen,[84] the average sperm concentration has decreased in the past 50 years from 113 million/ml to 66 million/ml.[20] Most recent studies do not confirm a decrease in sperm concentration, semen volume and percent normal morphology.[84-86]

Diagnostics

The patient's habitus as well as the pattern of virilization should be noted because changes could point to genetic abnormalities. The testes should be palpated for consistency and size because a reduction of seminiferous tubules and germinal elements is manifested as testicular atrophy. A decreased testicular size correlates with impaired spermatogenesis. Semen analysis remains the most important examination of the laboratory evaluation; a sperm density of 20 million/ml is the minimal requirement for normal fertility. Usually, specimens are obtained by masturbation after sexual abstinence of four to five days. The motility of sperm is highly correlated with fertility; normally at least 25% should be forwardly progressive at high speed and 30% at moderate speed. Up to 25% of all patients exhibit an abnormal semen analysis, for which no aetiology can be determined.[87] A white blood cell count greater than one million/ml may be associated with an infection or inflammation as well as with infertility.[88] The importance of pathological morphology of the sperms for fertility is unclear,[89] but the specimen should contain at least 50% normal forms. In cases of normal spermatogenesis, pulsatile hypothalamic secretion of gonadotropin-releasing hormone (GnRH) results in episodic secretion of gonadotropins (FSH, LH) by the pituitary gland. Increases in FSH normally indicate an irreversible disorder of spermatogenesis for which no treatment is possible. Hypothalamic or pituitary dysfunction leads to low peripheral levels of testosterone and an absence of spermatogenesis. Chromosomal analyses are indicated in patients whose history and physical findings suggest a genetic basis (2% of infertile men and 20% of patients with azoospermia). A testicular biopsy is performed primarily on azoospermic patients with normal-sized testes and normal FSH levels to differentiate between ductal obstruction and abnormal spermatogenesis.

Drug treatment

In congenital testosterone deficiencies (e.g. idiopathic hypogonadotropic hypogonadism or Kallman's syndrome) GnRH can be given to stimulate spermatogenesis and pituitary release of FSH and LH. Another possibility is to apply HCG (human chorionic gonadotropin), which has LH-like activity for stimulating intratesticular production of testosterone. HMG (human menopausal gonadotropin) is sometimes given supplementarily to improve the success of gonadotropin therapy. A replacement of testosterone is indicated in acquired testosterone deficiencies such as pituitary surgery, prolactinoma, castration or cirrhosis of the liver. In cases where seminal white blood cell concentrations exceed one million/ml, and where there is evidence for the presence of bacteria, an antibiotic treatment is suggested because the motility of sperms can be influenced by lymphokines and monokines.

Surgical treatment

Vasectomy is a popular method of achieving male sterility, but 6% of vasectomized men later request its reversal.[90] In cases of azoospermia due to obstruction after vasectomy, a vasovasostomy can be performed by microsurgery. Published data show subsequent pregnancy rates from 35% to 71%.[91] An epididymovasostomy is indicated in patients with azoospermia due to congenital or acquired epididymal obstruction.[92] Response rates, as defined by the presence of sperm in the follow-up semen samples, vary from 86% to 39%.[92-95] Pregnancy rates range from 13%[94] to 72%.[92]

Female infertility

The main causes of female infertility are ovarian dysfunctions and disorders of the tubes and uterus. Frequently two or even all three causes can be found in one patient.[96]

Ovulatory disorders

Disorders of the menstrual cycle are the first indications of ovarian dysfunctions. In cases of amenorrhea or oligomenorrhea the chances of becoming pregnant without therapy are very low. However, most women with ovulatory disorders seem to have a normal menstrual cycle, even though they are suffering from anovulation or corpus luteum deficiency.[97] These disorders can be measured by the basal body temperature (BBT) and by several hormone analyses (FSH, LH, prolactin, estradiol, testosterone, DHEAS, TSH).[98,99] High levels of FSH and LH in a patient's serum are in most cases due to a lack of oocytes, which means that the number of oocytes produced was too low or that too many oocytes have already been consumed. Nearly 1% of women of reproductive age suffer from this kind of 'climacterium praecox'. Because a so-called intermittent ovarian failure may show the same hormonal constellation, it is advisable to repeat a hormone diagnosis several times to confirm the original diagnosis.[100] There is no established treatment for this condition; however, in some countries these women can enter an embryo donation program.[101]

When amenorrhea or oligomenorrhea appear in a clinical context with normal or very low levels of gonadotrophin, a deficiency in the hypophysis-hypothalamus axis has to be taken into account. Ovulatory disorders are often related to elevated levels of prolactin. A low-dose therapy of dopamine agonists is recommended in cases of mildly elevated or threshold prolactin levels.[102] High levels of androgens (testosterone and dehydroepiandrosterone sulphate are commonly associated with an elevated LH level and often with a large number of small follicles in the marginal zone (polycystic ovarian (PCO) syndrome); the patients usually suffer from oligo- or amenorrhea.[103]

Treatments with anti-oestrogens — indicated in all cases of anovulatory cycles, disorders of follicular maturation and malfunctions of the corpus luteum — result in an increased secretion of gonadotrophins and therefore a better stimulation of the ovaries. Clomifen can be given orally in a dosage of 50–150 mg/day from day 5 to day 9 of the cycle with sonographic control of the ovaries. In approximately 80% of all cases ovulation can be induced with pregnancy rates of 25% to 49%.[104] The potential risks are multifollicular growth and multiple births; an overstimulation syndrome can occur — especially in women with a PCO syndrome. The indications for gonadotrophins are severe ovarian malfunctions and unsuccessful therapies with anti-oestrogens. The pregnancy rates can reach 20% to 30% per cycle.[33] The therapy should be carried out using sonographic and endocrinological checks because, apart from the possibility of multiple pregnancies, it can induce an ovarian hyperstimulation syndrome (OHS) with massive cystic enlargements of the ovaries, ascites production and perhaps life-threatening complications.[105]

Normally, severe hypothalamic amenorrhea or PCO syndrome is associated with an impairment of the gonadotrophin releasing hormones (GnRH) secretion. It can be compensated for by a small computer-controlled pump carried by the patient, which regularly injects pulses of GnRH intravenously or subcutaneously. The total application time is two to three weeks with a success rate of 30%.[106]

Tubal disorders

If the cycles are ovulatory and the andrological prerequisites are normal, the tubal functions must be examined. The gold standard for the examination for tubal patency is laparoscopy with chromopertubation. With the newly developed HSCS method (Hysterosalpingo-contrast sonography) tubes and the tubal flow are measured by doppler sonography with the help of an ultrasound opaque solution (galactose).[107] HSG (Hysterosalpingogram by contrast-radiographic visualization) of the cervical canal, the uterine cavity and the fallopian tubes allows the identification of tubal patency, malformations, inflammatory processes, scarring and tumorous changes. HSCS and HSG can be performed without anesthesia. If the tubes have been removed, a pregnancy can be achieved only by in vitro fertilization (IVF; see below). If both tubes are blocked, microsurgery techniques or IVF can be used.[108] However, tubal spasms are often falsely diagnosed as proximal blockages. Approximately 20% of all infertility patients suffer from endometriosis leading to tubal adhesions. Primary endometriosis is treated by operation followed by a medication with Danazol or GnRH-analoga for six months.[109]

Disorders of the uterus

Malfunctions of the uterus, which are of congenital or exogenous origin, influence implantation or early embryonic development negatively. Septum walls have the greatest importance, whereas other malformations, e.g. uterus bicornis and uterus duplex, are negligible. Intramural and submucous myoma can induce abortions; therapy is performed by laparotomia or sometimes by hysteroscopic surgery.[110]

Technologies in reproductive medicine

Insemination

One of the less invasive technologies used to treat idiopathic

infertility or male subfertility (i.e. bad sperm quality) is intrauterine insemination. Because it bypasses the cervical canal, it is also used for cervical factor infertility. Insemination can be performed during the natural or a stimulated cycle but has to be timed very exactly and carried out shortly before ovulation occurs. As a precondition for this technique the woman must have at least one patent tube. Furthermore, it is necessary to separate the spermatozoa from the seminal plasma in order to reduce the bacterial content and to separate and concentrate motile spermatozoa from pathological ejaculates. Under ovarian stimulation a 21% pregnancy rate per cycle may be achieved.[111]

In vitro fertilization

With in vitro fertilization, a therapy for infertile women has been developed which, to bypass existing problems, shifts the place of fertilization from the fallopian tube to the test-tube when fertilization within the tubes is not possible because of tubal disorders. Up to 56% of the problems solved by in vitro fertilization are caused by missing or blocked fallopian tubes. Sterilities due to bad-quality ejaculates make up a further 28% of the problems treated in this way; only a small proportion of problems treated by IVF are caused by idiopathic sterility (8%) or endometriosis (5%).[112] Because IVF technology is often seen as the final step, more than 70% of the IVF patients are older than 30 and 38% older than 35.[112] The poor endocrine response and embryo cleavage rates, and also the decrease in the quality of the oocytes and the receptivity of the uterus, lead to lower pregnancy rates in older women.[113,114] Furthermore, clinical pregnancies occur almost exclusively in those female patients whose husbands have a sperm concentration of at least 10 million spermatozoa/ml, a total sperm motility of more than 30%, a progressive motility of more than 15%, and a normal morphology in more than 20% of all spermatozoa.[115] The IVF procedure is performed much the same today as it was in 1978 and can be still subdivided into the stages of hormonal stimulation,[116] follicular puncture,[117] semen preparation and a 48-hour embryo culture.[118] In the last stage, the embryo is transferred through the cervical canal into the uterus.[119]

Pregnancy rates after embryo implantation are influenced by several factors including the quality, number and developmental stage of the embryos, the technique and ease of the transfer procedure, and the age of the patient. According to the German IVF register,[112] the pregnancy rate by transfer for an individual patient aged between 30 and 34 increased from 14.8% to 31.0% as the number of transferred embryos increased from one to three; for women aged 39 or older the pregnancy rate increased from 7.1% for one embryo to 22.9% for three embryos.

Tubal transfers

From the very beginning, in vitro technologies have been used to treat not just tubal sterility, but a wide variety of other types of sterility, mainly andrological subfertility or unknown (idiopathic) sterility.[120] If tubes are patent, technologies such as gamete intrafallopian transfer (GIFT) or cervical intrafallopian transfer (CIFT) can be performed. GIFT means the transfer of spermatozoa and oocytes into the fallopian tubes through the infundibulum by laparoscopy. CIFT can be done transcervically in a non-invasive way by transferring the gametes directly into the tubes.[121] The transcervical transfer is less stressful and invasive, but the pregnancy rate is higher when using the abdominal technique. According to the American Fertility Society, both tubal transfer methods yield better results than IVF.[122]

Intracytoplasmic sperm injection (ICSI)

Intracytoplasmic sperm injection (ICSI) involves the injection of a spermatozoon directly into the ooplasma. It is used when bad sperm quality allows neither in vivo nor in vitro fertilization.[123,124] ICSI now appears to be the most successful and significant innovation since the emergence of IVF itself. According to Palermo *et al*,[125] the pregnancy rates exceed 30% per cycle.

Embryo protection and fetal research laws

Although laws on bioethics differ among European countries and the United States,[126-129] all legal regulations typically focus on at least four aspects:

- The definition of the embryo and its protection
- Regulation of new reproductive technologies
- Surrogate parenting, and
- Physician involvement.

In contrast to the United Kingdom (UK) and most other countries, German law regards the fertilized oocyte (after syngamy of both pronuclei) as an embryo and thus warrants its total protection. Manipulation or research on human embryos (e.g. cloning, sexing, production of chimeras), apart from those steps necessary in assisted reproduction, are strictly forbidden. As the British Human Fertilization and Embryology (HFE) Bill regards the embryo as not differentiated up to day 14 after fertilization, research on the embryo is allowed within defined boundaries. In Germany, all created embryos (a maximum of three per cycle) within IVF must be transferred, whereas in most other countries storage of embryos and gametes by freezing is allowed.[130] The destruction of 3300 frozen embryos in the UK culminated in an emotionally charged debate in the summer of 1996. Oocyte and embryo donation, or the use of surrogate mothers, is forbidden in Germany. In the UK, surrogacy is allowed and the above-mentioned Bill facilitates a change in parentage through a simplified form of adoption.[127]

Doctors, as well as other health care professionals, should recognize that they are in the unique position to shape public policy;[126] in the British HFE Bill, physicians involved in assisted reproductive medicine are reminded that certain crucial information should be given to patients.[127]

Infertility treatment and psychological functioning

> There is no inner recess of me left unexplored, unprobed, unmolested. It occurs to me when I have sex that what used to be beautiful and very private is now degraded and terribly public. I bring my charts to the doctor like a child bringing home a report card. Tell me, did I do well? Did I ovulate? Did I have sex at all the right times as you instructed me?[38]

Severe physical and emotional distress, especially anxiety and depression, are associated with medical investigation, diagnosis, treatment, and prognosis of infertility in cases of successful as well as unsuccessful 'outcome'.[40,50-52,131-142] In particular, negative effects on the patients' sexual life because of planned intercourse ('sex on demand') were reported. Men often described feelings of shame and degradation in connection with the processes and results of semen analysis.[143] The time-consuming medical treatment can lead to restrictions in daily life and difficulties in employment.[144,145] Emotional distress, above all the failure marked by the beginning of the menstruation, may be harder to bear than physical problems (e.g. an increase in weight, headaches or fatigue) and potential health risks (e.g. from repeated hormonal overstimulation, multiple punctures or sonography).[139,146-148]

The burden placed on infertile people may be increased by

physicians who are not skilled in communication or who are not encouraged to discuss the medical and psychological components of infertility with patients.[42,149,150] As far as the assisted conception techniques are used to bypass 'something wrong', patients too are in danger of losing sight of the primary emotional aspects, and of focusing exclusively on the physical defects that are to be rectified.[42] Moreover, new technological facilities (e.g. ICSI) raise 'artificial hopes' even in formerly 'hopeless' cases. Infertility therapy offers no definite end point, leaving patients with a glimmering hope of achieving conception by the next treatment cycle or with the help of further improved technology.[8,39,48,151-153]

The general practitioner's role in managing infertility

Although we would not demand that all GPs, independent of their training and interests, should be competent in diagnosing, treating and counselling infertile couples, certain key elements of this work fall within the scope of general practice and are rarely covered by other health institutions. Some of these elements are shown in Box 1. They mark a different approach to the doctor–patient relationship from that used in treating somatic diseases.

About 10–50% of all involuntarily childless people never seek professional help.[9] Some may doubt whether their condition is caused by somatic disorders, whereas others may be not sure if they really desire a child. In any case, many patients would like their doctor to initiate discussion about their childlessness during the consultation. This hypothesis can be derived from studies about patient needs and expectations[155] and from our own pilot study featured in this issue (pp. 105–106). GPs may assist infertile couples to become aware of their motivation for having a child and, if necessary, to obtain professional help in time.

Even in health systems where GPs are not expected to practice gynaecology,[156] history taking (Box 2) and some basic investigations may disclose a common cause of infertility that will help the GP to decide whether the patient requires an early referral or can be managed in general practice.[157,158] Emslie, Grimshaw and Templeton[159] measured the effect of guidelines for the management of infertility and for the referral process from general practice to specialist care. GPs who took a full sexual history and carried out some basic investigations significantly improved the care process and provided the specialist with useful information. In the process, GPs were able to accelerate the diagnostic and therapeutic procedures. There are even suggestions of a more 'specialized' role for GPs with regard to ovulation induction therapy in suitable cohorts of patients (in close collaboration with local gynaecologists).[160]

The GP may also provide the couple with information, if available, about the quality of licensed clinics, including the number of patients treated, treatment options, live birth rates and difficulties in evaluating them, counselling and patient support groups.[162,165] Moreover, a close liaison between GPs and the fertility clinic protects patients from getting lost in the technological maze that modern clinics sometimes generate.[156] Cooperation should also include delegation of those treatments that can easily be administered by GPs. This may especially help couples who have difficulties with the tight schedules operated by the clinics.[166]

The most important role of GPs may be to provide the infertile couple with valid information about the risks and the 'outcome' of assisted conception techniques (Box 2). According to our own study (pp. 000–000), many patients would like their GP to discuss infertility treatment and its consequences. Beyond that, those couples who ultimately remain childless after infertility treatment are left to themselves and forced to cope with permanent childlessness. Assisting infertile people in coping with the crisis of infertility, the social isolation and the stresses of medical treatment, as well as helping them to correct unrealistic expectations and to look for alternatives,[69] may be the most important role for the GP.[39,156]

Moreover, the infertile couple's situation could result in diseases and complaints. To our knowledge, Jensen[16] was the first (and to date the only) physician to describe the association of psychosomatic complaints and psychiatric disorders with childlessness in a general practice population. Psychiatric disorders offered useful clues in the detection of involuntarily childless female patients, as about two-thirds of women presenting with

Fertility consultations

- Deal with wishes, plans and motives rather than with specific disease entities
- Deal with an absent 'third party' (the urgently wanted child)
- Involve sexuality as a biopsychosocial reality
- Frequently involve several persons (partners)
- Sometimes involve other generations (consider tradition and chronology)
- Establish a specific doctor–patient relationship involving transference and countertransference reactions.

Box 1. Key elements of GP consultations with infertile couples.[154]

Initial evaluation

- History taking (partners should be seen separately, if appropriate). Issues to consider are:
  - ☐ duration of childlessness
  - ☐ menstrual cycle
  - ☐ abdominal urogenital surgery
  - ☐ pelvic inflammation
  - ☐ sexually transmitted diseases
  - ☐ erectile and ejaculatory problems, and
  - ☐ knowledge of the fertile period.
- Beliefs and motives of the couple regarding desire for a child and causes of infertility

Risks and likely outcome of infertility treatment

- Hyperstimulation and multiple pregnancy by anti-oestrogenic treatment and gonadotropin therapy, especially in cases of stimulation for in vitro fertilization
- Increased rate of miscarriage, premature birth, perinatal mortality and long-term morbidity due to multiple gestations
- Risk of miscarriage by ICSI controversially discussed presently
- Outcome (overall live delivery rates), even for IVF and the gamete intrafallopian transfer (GIFT), is not higher than about 20% (20 deliveries per 100 treatment cycles). Only small increases have been recorded in the past years; delivery rates for the most successful reproductive technology today, ICSI, are suppopsed to vary around 30%.

Box 2. Initial evaluation of the couple, and information about risks and outcome in infertility treatment.[11,125,158,159,162-165]

psychogenic diseases were classified as infertile. Following up these clues may constitute an important task for GPs .

Conclusion

The management of infertile patients or couples confronts the GP with an uncommon doctor–patient relationship, involving psychological problems and conflicts, the need to cooperate with clinics, specialists and sometimes psychologists, and the negotiation of responsibility. Some of the diagnostic and therapeutic procedures outlined in this review may be carried out by the GP, but above all he or she can and should be an important source of information and emotional support for the infertile couple.

Future research should reveal to what extent patients expect their doctor to become involved and how the participation of GPs may help to increase patient satisfaction, reduce stress during fertility treatment, and in the long term prevent psychosomatic diseases and complaints. GPs may have to protect couples against the promises of technology and the widespread pressure to submit to assisted reproduction techniques without careful reflection.[153] Researchers, clinical specialists and GPs will best meet the needs of infertile couples by accepting their colleagues' professional competence and by their willingness to cooperate.

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